GIANT POWER

100AH **LiFePO4 DEEP CYCLE BATTERY**

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INSTRUCTION MANUAL

INTRODUCTION

Congratulations on purchasing this high quality Giant product.

In doing so, you now have the assurance and peace of mind that comes from purchasing a product that has been manufactured to the highest quality standards.

Our aim is for you to be completely satisfied with your purchase, and therefore your new product is backed by a comprehensive 5-year warranty and an outstanding after-sales customer service team.

We hope you will enjoy using this product for many years to come.

If you require technical support, or in the unlikely event your purchase appears to be faulty, please contact our support team for immediate assistance. You can find up-to-date contact details on our website.

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GENERAL INFORMATION AND SAFETY

PLEASE KEEP THIS MANUAL FOR FUTURE REFERENCE

This manual contains important safety instructions for your lithium deep cycle battery.

Do not operate the battery or modify the installation unless you have read and understood this user manual. Pay particularly close attention to CAUTION and WARNING statements.

Giant Power ecommends that the battery be installed by an appropriately qualified professional.

DISCLAIMER

While caution has been taken to ensure the accuracy of the contents of this guide, Giant Power assumes no responsibility for errors or omissions.

Please note that specifications and product functionality may change without notice.

MODELS COVERED BY THIS MANUAL

100Ah Lithium ($LiFePO_4$) DEEP CYCLE BATTERY

WARNING

Failure to follow these instructions may result in personal or property injury, as well as reduced battery life or battery failure.

- **To charge the battery, you must use a charger with a specific charging profile for lithium batteries. Your warranty may be reduced or voided if you use an unsuitable charger.**
- **Do not install this battery under bonnet or use it for cranking applications.**
- Do not submerge the battery in water.
- Do not short circuit the battery terminals.
- Do not puncture, impact or drop the battery.
- Do not disassemble the battery. Opening the case may cause electric shock or fire and will void your warranty.
- Do not expose the battery to fire, sparks, high voltage or temperatures in excess of those stipulated in the specifications table of this manual.
- Do not connect in series more than four (4), or parallel more than six (6) of these batteries together. Ensure that connections are made correctly as per the "Usage and Storage" section of this manual. Do not connect this battery to batteries with different chemistries.
- Do not store the battery at a voltage lower than 11.5V.
- Endeavour to keep the battery above 20% SOC where possible.
- Observe the limitations of this battery as stipulated in the specifications table of this manual, paying particular attention to maximum charge and discharge currents.
- If the battery emits any unusual smells, appears to be atypically hot, shows signs of distortion or displays any other abnormality during operation or storage, discontinue use immediately and contact for assistance.

CAUTION

The battery should not be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are supervised or have been instructed on how to use the appliance by a person responsible for their safety.

Cable and fuse sizes are specified by various codes and standards which depend on the type of vehicle the battery is installed into.

Selecting the wrong cable or fuse size could result in harm to the installer or user and/or damage to the battery or other equipment installed in the system.

The installer is responsible for ensuring that the correct cable and fuse sizes are used when installing this battery.

SPECIFICATIONS

Nominal voltage	12.8V
Capacity (C20)	100Ah
Max series/parallel configurations	4S/6P
Self-discharge	<3% per month
Cycle life	3000 cycles (100% DOD) / 6000 cycles (80% DOD)
Normal charge voltage	14.4 ± 0.2V
Discharge cut-off voltage	10.0V
Max discharge current (constant)	100A
Pulse current (3s)	200A
Optimum charge temp	0°C to 45°C
Optimum discharge temp	-20°C to 60°C
Optimum storage temp	0°C to 40°C
Weight	12.0kg
Dimensions	330mm (l) x 173mm (w) x 216mm (h)
Terminal type	M8
Certifications	UN 38.3, UL 1642, IEC 62133-2:2017, UN3840, IEC 62619:2017, CE, RoHS

PACK CONTENTS

1x	100Ah Deep Cycle $LiFePO_4$ Battery

INSTALLATION

Ensure that the area in which you will be performing installation of the battery is dry.

Secure the battery firmly to the mounting surface, ensuring that no movement is possible even under significant force.

You may install the battery in any orientation, including upside-down.

Ensure that your proposed installation location will not cause the battery to be exposed to temperatures in excess of the maximums stipulated in the specifications table of this manual. If you believe heat may be an issue, you may consider making use of mechanical ventilation such as fans.

Ensure you do not mount the battery in a way that could cause the terminals to come into contact with any metal surface or object. This is to avoid the possibility of short-circuiting the terminals. If you are intending to remove the battery from its installed location periodically, ensure there is a clear pathway free of metal surfaces and objects.

Do not install the battery in a wet area such as boat decks, open ute trays or chassis mounts.

Do not install the battery in a compartment dedicated to gas storage.

CONNECTION - GENERAL

We recommend that no more than four cable lugs be connected directly to a battery terminal. If you do have more than 4 lugs, you should use a fuse block and negative busbar instead.

Ensure the battery terminals are clean before connecting any cable lugs to them.

Stack cable lugs on the battery terminals in order from heaviest draw (thickest cables) to lightest draw (thinnest cables). Lugs connected to the thickest cables should be positioned at the bottom and the thinnest at the top.

Where possible, make use of insulating terminal boots and lug protectors. Ensure all termination lugs are well crimped (not soldered) and protected.

Always use the spring washers provided for the battery terminal bolts. This ensures sufficient pressure is applied to the cable lugs for secure connection without having to over-tighten the bolts. Stack the spring washer on top of the cable lugs, not underneath.

CONNECTION - MULTIPLE BATTERIES IN PARALLEL

You may connect up to six (6) of these batteries in parallel. This will create a single system in which the total capacity is the sum of the capacities of the individual units and the nominal voltage is equivalent to the voltage of one unit e.g. 6 x 100Ah 12.8V batteries in parallel gives a 600Ah 12.8V system.

When connecting batteries in parallel, you should use appropriately rated busbars and connect the batteries as per the below diagram. If connected in this way, the maximum discharge current of the system will be the maximum discharge of a single battery multiplied by the number of batteries in the bank e.g. six batteries connected in parallel will yield up to 100A per hour x 6 = 600A per hour.

WARNING

You must make sure to use cables that are the correct gauge for the maximum discharge current in your application - consult an auto electrician if you are unsure which cable gauge to select. The cables must also be exactly the same length.

CONNECTION - MULTIPLE BATTERIES IN SERIES

You may connect up to four (4) of these batteries in series. This will create a single system in which the nominal voltage is the sum of the voltages of the individual units and the system capacity is equivalent to the capacity of one unit e.g. 4 x 100Ah 12.8V batteries in series gives a 100Ah 48V system.

When connecting batteries in series you should take the negative connection from the opposite end of the bank to the positive connection, as per the below diagram.

WARNING

You must make sure to use cables that are the correct gauge for the voltage of your system and maximum discharge current required - consult an auto electrician if you are unsure which cable gauge to select. The cables must also be exactly the same length.

CAUTION - CONNECTING IN PARALLEL OR SERIES

Before connecting multiple batteries in parallel or series, ensure that all batteries are fully charged. Do not connect batteries that are mismatched in voltage, capacity, age or chemistry. Batteries connected in parallel or series should be disconnected and charged individually on an annual basis.

STORAGE, SHIPPING AND DISPOSAL

Ensure that the battery is stored in a dry, clean, shaded and well-ventilated environment, at a temperature range that does not exceed the maximum storage temperature stipulated in the specifications table in this manual.

Where possible, endeavour to store the battery at around 40-50% state of charge.

At no time should the voltage of the stored battery be allowed to drop below 11.5V.

Be aware that these batteries will self-discharge at a rate of about 3% per month. We recommend the state of charge is checked regularly and topped up if necessary.

If shipping the battery between locations, please be aware that lithium is classified as Class 9 Dangerous Goods. Please ensure you comply with local, national and international (if applicable) regulations for transportation of these goods.

WARNING

Lithium batteries must never be disposed of with ordinary refuse, as this can cause fires and significant environmental contamination. Contact an authorised lithium battery recycling facility - you can find these at places such as Battery World, Aldi and Officeworks.

CHARGE METHODS

Lithium batteries need to be charged slightly different to other batteries, to ensure they live a long life and provide maximum capacity.

There are several charging devices you can utilise, but whichever device you choose, it must have a lithium charge profile. Suitable devices include DC-DC chargers, solar panels (with regulator) and AC (mains power) chargers.

For optimum battery longevity, it is recommended that the charging current should be 30% or less of your battery capacity.

WARNING

- DO NOT use a charge profile with a "Pulse" or "Equalisation" stage. This will damage the battery and void the warranty.
- DO NOT charge your battery directly from an alternator or via VSR.

CHARGE METHODS: DC-DC CHARGER

DC-DC chargers allow you to charge a lithium battery from your vehicle's alternator.

You generally cannot charge a lithium battery directly from a vehicle alternator, because lithium batteries have a very high maximum charge current compared to lead-acid batteries. With nothing to intermediate between the alternator and battery, the battery will draw its maximum charge current from the alternator, which can lead to the alternator overheating and burning out.

A DC-DC charger will act to moderate the flow of current, protecting your alternator from overheating. In addition, they have a multi-stage charging algorithm which will ensure your battery is optimally charged and its service life is maximised.

Some DC-DC chargers also include a second input allowing you to connect a solar panel, and may even be able to prioritise the solar charge method when it detects a panel is connected and providing current.

CHARGE METHODS: SOLAR PANEL WITH REGULATOR

12V solar panels harness the energy of the sun to charge your battery. There are many solar panel options on the market, but they can be split into two main categories: fixed and portable.

Fixed solar panels usually have a rigid metal frame. They are designed to be permanently fixed to your vehicle and connected to a regulator or DC-DC charger mounted inside. They are great for charging your vehicle while on the go without consuming current from your alternator.

Portable solar panels (solar blankets, solar mats etc.) are designed to be set up while the vehicle is stationary, such as when you're at camp. They are usually connected to the battery via a portable regulator.

Either type of solar panel is fine for charging these lithium batteries, but as stated previously it is important to ensure that your regulator has a lithium charge profile to maximise your battery's service life.

AC CHARGER

If you're charging up your batteries at home before or after a trip, or if you're at a powered camp site, you can also use an AC (mains power) battery charger. Mains battery chargers are available as portable devices or can be built into your 12V system. Again, you should make sure that the AC charger you wish to use contains a lithium charge profile.

CAUTION: CHARGING IN SUB-ZERO TEMPERATURES

You must not charge your battery in sub-zero conditions. Doing so will void the warranty. In order to charge in sub-zero conditions, you'll need to purchase our equivalent 135Ah Lithium Cold Climate Lithium ($LiFePO_4$) Deep Cycle Battery with Bluetooth (HKPBATL135BH).

FREQUENTLY ASKED QUESTIONS

Q. Do I need a specific charger for my battery?

A. Yes, you will need to ensure that the charging method that you choose is suitable for use with lithium batteries. Please refer to the "Charging" section of this manual for further details. Using a charging method other than those we stipulate may void your warranty.

Q. Can I mount my battery inside of a car engine bay?

A. We don't recommend putting lithium batteries inside the engine bay; doing so will void the warranty. Additionally, this will significantly reduce the service life of your battery, and at worst it may cause it to fail.

Q. Can I use my battery with an inverter?

A. Yes you can, although you must take care not to exceed the maximum discharge current stipulated in the "Contents & Specifications" section of this manual.

Q. Is there anywhere I can't install my battery?

A. You should not install your battery anywhere that is subject to water ingress or is used for gas storage. Also take care not to place the terminals near any metal surfaces.

WARRANTY

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Giant Power warrants that this product will be free from defects in material and workmanship for five years. The warranty commences on the date of purchase by the original purchaser, and is not transferable. To access the benefits of this warranty, you must retain your proof of purchase and follow any other direction we reasonably give you (e.g. completing and returning your warranty card if applicable).

TO BEGIN YOUR WARRANTY CLAIM

If you believe your product is defective, it must be returned for inspection by our warranty claims department.

1. You must have a Return Authorization (RA) number. To get your RA number, please complete the form found on our website and wait for the warranty team to contact you.
2. Once you have an RA number, you must arrange for the product must be shipped at your own expense back to (keep your receipt). The address for shipment will be provided when we issue your RA number.
3. Please be sure that your RA number is clearly marked on the outside of the packaging used for shipping.

Completing the steps as mentioned will ensure a faster process of your claim, so that you can get your product back to you as soon as possible.

Once we receive your returned product, our technicians will inspect it. We will then notify you of the outcome of your claim.

If we accept your warranty claim, we will either repair, replace or refund the goods at our discretion. We will also reimburse you for the shipping costs you incurred in sending the goods back to us. Any products that we choose to replace or refund become the property of. If we do not accept your claim, we will advise you of the reason and hold your product for collection. You will need to arrange and pay for the product to be shipped back to you. If your product is not collected within 30 days of your warranty claim being finalised, we may destroy it.

WARRANTY

Your warranty is voided if we (at our sole discretion) determine that there is evidence of one or more of the following:

- **Negligence:** Improper installation, improper or extreme use, use that contravenes this instruction manual, etc.
- **Abuse:** Road hazards, Damage beyond the limits of "normal wear and tear."
- **Unauthorized Repair:** Repair service performed by an unauthorised service centre.
- **Disassembly:** Any attempt to open, tamper with or otherwise compromise the integrity of the product.
- **Consequential damage:** damage to this product caused by the failure of another component of the vehicle or device in which this product is installed.

Additionally, in the case of battery products: the following will void your warranty:

- **Incorrect charger:** The use of a battery charger that is not suitable for lithium batteries i.e. does not have a lithium battery charge profile.
- **Under bonnet use:** Using this battery under the bonnet of a vehicle.
- **Overcharge/over-discharge:** Charging or discharging your battery at a rate higher than those stipulated in the Specifications table of this instruction manual.
- **Water ingress:** your battery is not designed to be installed in an area that is subject to water ingress.

It is reasonable to expect that over its service life the capacity of your battery will reduce. Natural capacity decrease, which we define as a decrease in capacity of less than 10% per year of ownership, is not covered by this warranty. All batteries are tested using our in-house equipment and if we decline your claim for capacity decrease we will provide you with a copy of the test report.

Exterior Finish: uses the highest quality materials available, but depending on location, environment and exposure, the colour of exterior surfaces can fade. We will not approve any warranty claims that relate to fade.

DISCONTINUED ITEMS

Discontinued items that are still under warranty will be reviewed. If a discontinued item is covered under warranty it may be replaced by an equivalent or superior item. If an equivalent item is not available we will determine terms of resolution on a case-by-case basis.

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